



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,353	01/20/2004	Tsutomu Motohashi	R2184.0294/P294	9909

24998 7590 01/23/2007
DICKSTEIN SHAPIRO LLP
1825 EYE STREET NW
Washington, DC 20006-5403

EXAMINER

NGUYEN, LINH THI

ART UNIT	PAPER NUMBER
----------	--------------

2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/759,353

Applicant(s)

MOTOHASHI, TSUTOMU

Examiner

Linh T. Nguyen

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 1, claimed a "single means," which does not reasonably provide enablement for achieving the purpose of the invention. Refer to the MPEP 2164.08 (a) stated "A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor."

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 12-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 12-14 are drawn to a "program" *per se* as recited in the preamble and as such is non-statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define

Art Unit: 2627

any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, 5, 6, 8, 9, 11, 12, 14, 15, 17, 18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Chan (US Patent Number 5271018).

In regards to claim 1, Chan discloses an information recording/reproducing apparatus that performs reading and writing of information with respect to an information recording medium in which user data areas (Fig. 3, white area) and alternative areas (Fig. 3, spare sector and overflow) are alternately arranged (Fig. 3, at the end of each zone contains a spare area), said apparatus comprising: means for assigning, when an error occurs in a certify process or a verify process with respect to one of the user data areas (Fig. 4, bad sector) and an alternative destination is to be assigned (Fig. 4, spare sector and overflow), in the case where an unused field does not exist in the alternative area (Column 8, lines 66-68 and Column 9, lines 1-8) corresponding to the user data area in which the error occurs, the alternative destination in another alternative area (Fig. 4, spare overflow area) on which the certify process or

Art Unit: 2627

the verify process is performed (Column 9, lines 8-10).

In regards to claim 2, Chan discloses the information recording/reproducing apparatus as claimed in claim 1, further comprising: means for performing, when the error occurs in the certify process or the verify process and the alternative destination is to be assigned (Fig. 3, spare sector and overflow), in the case where the certify process and the verify process are not performed on the alternative area having the alternative destination, the certify process and the verify process on the alternative area having the alternative destination (Fig. 3); and means for assigning, when an error occurs in the certify process or the verify process performed by said means for performing the certify process and the verify process, the alternative destination in an alternative area other than the alternative area in which the error occurs (Fig. 4, if there are 2 or more bad sector, then the 1st bad sector is replace in the local spare sector and then to the spare overflow area).

In regards to claim 3, Chan discloses the information recording/reproducing apparatus as claimed in claim 1, further comprising: means for performing the certify process and the verify process on the alternative area first before the user data area (Fig. 4, reads the local spare sector first); and means for registering, as a position the use of which is prohibited (Column 7, line 54), a position in the alternative area at which position an error occurs in the certify process or the verify process performed by means for performing the certify process and the verify process (Column 7, lines 47-57).

In regards to claim 5, Chan discloses an information recording/reproducing apparatus that performs recording and reproducing of information with respect to a recording medium having a plurality of user data areas (Fig. 3, plurality of data zone) for recording user data therein and a plurality of alternative areas (Fig. 3, each zone has a section for spare area) corresponding to the respective user data areas and each having an alternative field for replacing a defect field in the user data areas (Fig. 3), said apparatus comprising: a defect field detection part that detects a defect field at the time of a format process or recording of information (Fig. 4, bad sector (manufacturer); a first usable field determination part that determines whether an alternative field allowing replacement exists in the alternative area corresponding to the user data area having the defect field detected by said defect field detection part (Fig. 4, track 1, sector 3 is the spare sector for the bad sector track 0, sector 2); and a first alternative field assigning part that assigns, when said first usable field determination part determines that the alternative field does not exist (Column 9, lines 5-8), as an alternative field for the defect field, an alternative field allowing replacement in another alternative area (spare overflow) to which the format process is performed (Column 9, lines 8-10).

In regards to claim 6, Chan discloses the information recording/reproducing apparatus as claimed in claim 5, further comprising: a formatted alternative area determination part that determines whether an alternative area exists on which the format process is performed (Column 9, lines 16-21); a second alternative field

Art Unit: 2627

assigning part that assigns (overflow spare sector), when said formatted alternative area determination part determines that an alternative area does not exist (Column 9, the table shows that in zone 3, partition 7 the local spare sector does not exist by indicating with the bit 81h) on which area the format process is performed, a predetermined alternative field in an alternative area on which the format process is not performed as an alternative field for the defect field; and an alternative field format process part that performs the format process on the alternative field assigned by said second alternative field assigning part (Column 9, lines 21-26 and the following table).

In regards to claim 8, Chan discloses the information recording/reproducing apparatus as claimed in claim 6, further comprising: a second usable field determination part that determines, when the formatted alternative area determination part determines that an alternative area exists on which the format process is performed (Column 9, lines 23-26), whether an alternative field allowing replacement exists in the alternative area on which the format process is performed (Column 9, lines 18-26), wherein, when the second usable field determination part determines that an alternative field (spare sector) allowing replacement does not exist (Column 9, lines 5-8), the second alternative field assigning part assigns (overflow spare sector), as an alternative field for the defect field, a predetermined field in an alternative area on which the format process is not performed (Column 9, lines 8-15).

In regards to claim 9, Chan discloses the information recording/reproducing apparatus as claimed in claim 7, further comprising: a second usable field determination part that determines, when the formatted alternative area determination part determines that an alternative area exists on which the format process is performed, whether an alternative field allowing replacement exists in the alternative area on which the format process is performed (Column 9, the first table shows the format of the each zone and the partition of local spare sectors and overflow spare sectors indicates that it exist or not base on the bit 80h or 81h), wherein, when the second usable field determination part determines that an alternative field allowing replacement does not exist (local spare sector 81h), the second alternative field assigning part assigns (overflow spare), as an alternative field for the defect field, a predetermined field in an alternative area on which the format process is not performed (Column 9, lines 50-54 and Columns 9-10, the table).

In regards to claim 11, Chan discloses an information recording/reproducing apparatus that performs recording and reproducing of information with respect to a recording medium having a plurality of user data areas (Fig. 4, plurality of zones) for recording user data therein and a plurality of alternative areas (Fig. 4, plurality of spare sectors in each zone) corresponding to the respective user data areas and each having an alternative field for replacing a defect field in the user data areas (Fig. 4, spare area is use for replacement of defect area), said apparatus comprising: an error detection part that detects an error that occurs at the time of a format process (Column 8, lines

40-55); a usable field determination part that determines whether a field allowing replacement exists in the alternative area corresponding to the user data area in which the error detected by said error detection part occurs (Column 8, lines 57-65); an error occurrence position information maintaining part that maintains (Column 9, lines 2-5), when said usable field determination part determines that the field allowing replacement does not exist (Column 9, lines 5-8), information relating to a position at which the error occurs; and an alternative field assigning part that assigns (Column 9, lines 8-15), after the format process ends, an alternative field for replacing the defect field based on the information maintained by said error occurrence position information maintaining part (Column 9, lines 16-26).

In regards to claims 12, 15, and 18, Chan discloses a program for causing a computer to carry out (Fig. 7, element 40): a procedure that performs recording and reproducing of information with respect to a recording medium having a plurality of user data areas (Fig. 3, plurality of data zone) for recording user data therein and a plurality of alternative areas (Fig. 3, each zone has a section for spare area) corresponding to the respective user data areas and each having an alternative field for replacing a defect field in the user data areas (Fig. 3), said apparatus comprising: a defect field detection part that detects a defect field at the time of a format process or recording of information (Fig. 4, bad sector (manufacturer)); a first usable field determination part that determines whether an alternative field allowing replacement exists in the alternative area corresponding to the user data area having the defect field detected by said defect field detection part (Fig. 4, track 1, sector 3 is the spare sector for the bad sector track

0, sector 2); and a first alternative field assigning part that assigns, when said first usable field determination part determines that the alternative field does not exist (Column 9, lines 5-8), as an alternative field for the defect field, an alternative field allowing replacement in another alternative area (spare overflow) to which the format process is performed (Column 9, lines 8-10).

In regards to claims 14, 17 and 20, Chan discloses a program for causing a computer to carry out (Fig. 7, element 40): a procedure that performs recording and reproducing of information with respect to a recording medium having a plurality of user data areas (Fig. 4, plurality of zones) for recording user data therein and a plurality of alternative areas (Fig. 4, plurality of spare sectors in each zone) corresponding to the respective user data areas and each having an alternative field for replacing a defect field in the user data areas (Fig. 4, spare area is use for replacement of defect area), said apparatus comprising: an error detection part that detects an error that occurs at the time of a format process (Column 8, lines 40-55); a usable field determination part that determines whether a field allowing replacement exists in the alternative area corresponding to the user data area in which the error detected by said error detection part occurs (Column 8, lines 57-65); an error occurrence position information maintaining part that maintains (Column 9, lines 2-5), when said usable field determination part determines that the field allowing replacement does not exist (Column 9, lines 5-8), information relating to a position at which the error occurs; and an alternative field assigning part that assigns (Column 9, lines 8-15), after the format

process ends, an alternative field for replacing the defect field based on the information maintained by said error occurrence position information maintaining part (Column 9, lines 16-26).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chan in view of Gotoh et al (US Patent number 6292625).

In regards to claim 4, Chan discloses the information recording/reproducing apparatus as claimed in claim 1. However does not disclose means for maintaining a position at which the error occurs when the certify process or the verify process is performed on the one of the user data areas; and means for assigning, after the certify process and the verify process are performed on the alternative area, the alternative destination with respect to the user data area having the maintained position.

In the same field of endeavor, Gotoh et al discloses the information recording/recording apparatus wherein means for maintaining a position at which the error occurs (Fig. 19, P304) when the certify process or the verify process is performed on the one of the user data areas (Fig. 19, P305); and means for assigning, after the certify process and the verify process are performed on the alternative area (Fig. 19, P308), the alternative

Art Unit: 2627

destination with respect to the user data area having the maintained position (Fig. 19, P308-P310). At the time of the invention it would have been obvious to person of ordinary skill in the art to modify Chan recording/reproducing apparatus that assign an alternative destination when an error is detect but maintain at the position of recording/reproducing as taught by Gotoh et al. The motivation for doing so would have been to maintain real time recording and continuous reproducing of the data.

Claims 7, 10, 13, 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan in view of Ueda et al (US Publication number 20030137910).

In regards to claim 7, Chan discloses everything that was claimed in claim 6. However, Chan does not disclose a recording/reproducing apparatus further comprising: a use prohibition part that, when the defect detection part detects an alternative field on which the format process is performed by the alternative field format process part as a defect field, prohibits use of the defect field, wherein the second alternative field assigning part assigns, as an alternative field for the defect field, another alternative field in the alternative area including the alternative field the use of which is prohibited by said use prohibition part.

In the same field of endeavor, Ueda et al discloses a recording/reproducing apparatus further comprising: a use prohibition part that, when the defect detection part detects an alternative field on which the format process is performed by the alternative field format process part as a defect field (Fig. 7, section 701), prohibits use of the defect field,

wherein the second alternative field assigning part assigns (Fig. 7, section 703 is assigned), as an alternative field for the defect field, another alternative field in the alternative area including the alternative field the use of which is prohibited by said use prohibition part (Paragraph [0103], lines 18-26). At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the recording/reproducing apparatus of Chan to detect a defect in the alternative field and prohibit the used of the alternative field to allocate the defect area to the next alternative field as suggested by Ueda et al. The motivation for doing so would have been to create a continuous recording/reproducing process.

In regards to claim 10, Chan discloses an information recording/reproducing apparatus that performs recording and reproducing of information with respect to a recording medium having a plurality of user data areas (Fig. 4, plurality of zones) for recording user data therein and a plurality of alternative areas (spare sector) corresponding to the respective user data areas and each having an alternative field for replacing a defect field in the user data areas (end of each zones and partitions has spare sector) , said apparatus comprising: an alternative area format process part that performs a format process on the alternative areas separately from the user data areas (Column 8, table); a defect field detection part that detects a defect field existing in the alternative area at the time of the format process by said alternative area format process part (Column 9, 81h).

Chan does not but Ueda et al discloses an apparatus that performs recording/reproducing of a medium, wherein, a use prohibition part that prohibits, when the defect field is detected by said defect field detection part, using the defect field as the alternative field (Fig. 7, section 701). The motivation is the same as claim 7 above.

In regards to claims 13, 16, and 19, Chan discloses a program for causing a computer to carry out (Fig. 7, element 40): a procedure that performs recording and reproducing of information with respect to a recording medium having a plurality of user data areas (Fig. 4, plurality of zones) for recording user data therein and a plurality of alternative areas (spare sector) corresponding to the respective user data areas and each having an alternative field for replacing a defect field in the user data areas (end of each zones and partitions has spare sector), said apparatus comprising: an alternative area format process part that performs a format process on the alternative areas separately from the user data areas (Column 8, table); a defect field detection part that detects a defect field existing in the alternative area at the time of the format process by said alternative area format process part (Column 9, 81h).

Chan does not but Ueda et al discloses an apparatus that performs recording/reproducing of medium, wherein, a use prohibition part that prohibits, when the defect field is detected by said defect field detection part, using the defect field as the alternative field (Fig. 7, section 701). The motivation is the same as claim 7 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh T. Nguyen whose telephone number is 571-272-5513. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LN
January 10, 2007


WAYNE YOUNG
SUPERVISORY PATENT EXAMINER